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(57) **ABSTRACT**

## ABSTRACT

Two-way pressure release valves in a shutter reduce the force needed to rotate it from a torpedo tube while the submarine is underway at high speeds. The valves are each mounted in a separate aperture in the shutter and have a pair of biasing springs that hold opposite end surfaces coplanar with outer and inner surfaces of the shutter to prevent generation of objectionable flow-noise while underway. When the shutter is rotated to expose a muzzle door of a torpedo tube, the valves are automatically displaced by pressure differentials created to free pathways for pressure equalization. The water flowing through the valves eliminates the pressure differentials, and consequently, reduces the total amount of force that would otherwise be needed to rotate the shutter.

**10 Claims, 2 Drawing Sheets**

